Access DB# 8621

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Michael Cleveland Examiner #: 76881 Date: 2/12/03
Art Unit: 2862 Phone Number 30 8-3331 Serial Number: 09/927403
Mail Box and Bldg/Room Location CP3 10B03 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

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Date Completed: 2-12-03
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Type of Search

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AA Sequence (#) _____
Structure (#) 1
Bibliographic 1 (and 2)
Litigation 5
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

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PTO-1590 (8-01)

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     FILE 'REGISTRY'
                  E POLYETHYLENE DIOXYTHIOPHENE/CN
                  E POLYETHYLENEDIOXYTHIOPHENE/CN
                  E PEDOT/CN
L1              1 SEA PEDOT/CN

L2             27 SEA 126213-50-1/CRN

     FILE 'LREGISTRY'
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L3              1 SEA BENZENE/CN
                  D RSD
L4          50165 SEA 46.150.18/RID

     FILE 'REGISTRY'
L5              7 SEA L2 AND L4
                  D L5 1-7 IDE
                  SEL L5 4,5,6,7 RN
L6              4 SEA (155090-83-8/BI OR 255709-61-6/BI OR 313494-88-1/BI
                  OR 332951-15-2/BI)

     FILE 'HCA'
L7            110 SEA L6
L8           8580 SEA HOLETRANSPORT? OR HOLEINJECT? OR HOLE#(2A)(TRANSPORT?
                   OR INJECT?)
L9          74481 SEA EL OR E(W)L OR (ELECTRO OR ORG# OR ORGANO#)(2A)LUM!N?
                   OR ELECTROLUM!N? OR ORGANOLUM!N? OR LIGHT?(2A)(EMIT? OR
                  EMISSION?) OR LED/IT
L10           15 SEA L7 AND L8
L11           45 SEA L7 AND L9

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                  E ETHYLENEDIOXYTHIOPHENE/CN
                  E ETHYLENE DIOXYTHIOPHENE/CN
L12             1 SEA 126213-50-1

     FILE 'HCA'
L13          1192 SEA L12 OR L1 OR PEDOT# OR POLYETHYLENEDIOXYTHIOPHENE#
                  OR ETHYLENEDIOXYTHIOPHENE# OR (POLYETHYLENE# OR ETHYLENE#
                  )(2A)DIOXYTHIOPHENE#
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L15           1 SEA 26914-43-2
L16           1 SEA 28210-41-5
                D IDE
                E BENZENESULFONIC ACID, 3-ETHENYL-, HOMOPOLYMER/CN
L17           1 SEA "BENZENESULFONIC ACID, 3-ETHENYL-, HOMOPOLYMER"/CN
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                E BENZENESULFONIC ACID, 2-ETHENYL-, HOMOPOLYMER/CN
                E BENZENESULFONIC ACID, 2-ETHENYL-, POLYMER/CN
L18           1 SEA "BENZENESULFONIC ACID, 2-ETHENYL-, POLYMER WITH
                CELLULOSE METHYL ETHER AND 1-ETHENYL-2-PYRROLIDINONE"/CN
                D IDE
L19           1 SEA 90111-29-8
L20           1 SEA 98-70-4
L21           1 SEA 46060-58-6
L22          17 SEA 90111-29-8/CRN
L23        1435 SEA 98-70-4/CRN
L24          15 SEA 46060-58-6/CRN
L25           4 SEA (L22 OR L23 OR L24) AND 1/NC
L26           9 SEA L25 OR L21 OR L20 OR L19 OR L17 OR L16 OR L15 OR L14


     FILE 'HCA'
L27       11011 SEA L26 OR PSS OR PSSA OR (POLYSTYRENE# OR STYRENE#)(2A)(
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                #)(2A)ACID# OR (POLYSTYRENESULPHONIC# OR POLYSTYRENESULFO
                NIC#)(2A)ACID# OR (SULPHONAT? OR POLYSULPHONAT? OR
                SULFONAT? OR POLYSULFONAT?)(2A)(POLYSTYRENE# OR STYRENE#)
L28         271 SEA L13 AND L27
L29          64 SEA L28 AND L8
L30         147 SEA L28 AND L9
L31          13 SEA L10 AND L11
L32           2 SEA L10 AND L29
L33           2 SEA L10 AND L30
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L37          21 SEA L10 OR L31 OR L32 OR L33 OR L34 OR L35
L38          88 SEA (L11 OR L29) NOT L37
L39          26 SEA L11 NOT L37
L40          62 SEA L29 NOT (L37 OR L39)
L41          79 SEA L30 NOT (L37 OR L39 OR L40)
L42           1 SEA L37 AND 1907-1998/PY
L43           0 SEA L39 AND 1907-1998/PY
L44           2 SEA L40 AND 1907-1998/PY
L45           5 SEA L41 AND 1907-1998/PY
L46           8 SEA L42 OR L44 OR L45
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                SAVE L39 CLE483A/A
                SAVE L40 CLE483B/A
                SAVE L41 CLE483C/A
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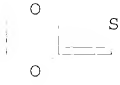
L46 ANSWER 1 OF 8 HCA COPYRIGHT 2003 ACS
130:45082 **Electroluminescent** polymer devices. Heeks, Stephen Karl; Wittmann, Hermann Felix (Cambridge Display Technology Ltd., UK). Brit. UK Pat. Appl. GB 2319880 A1 **19980603**, 25 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1997-25050 19971126. PRIORITY: GB 1996-24706 19961128.
AB **Light-emitting** devices comprising a polymeric active layer sandwiched between an anode an a cathode are described which are driven by a cyclic driver which applies a pos. voltage sufficient to cause **light emission** for only part of the time, with a low (e.g., neg. or zero) voltage being applied for the remainder. The cyclic drive acts to extend the useful life of the devices relative to devices which are continuously driven.
IT **126213-51-2**
(polymeric **electroluminescent** devices with cyclic driver voltage)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-12
ICA G09G003-30
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
ST polymeric **electroluminescent** device cyclic drive
IT **Electroluminescent** devices
(polymeric **electroluminescent** devices with cyclic

driver voltage)

IT 12798-95-7 50926-11-9, Indium tin oxide 96638-49-2, Polyphenylene vinylene **126213-51-2**
(polymeric **electroluminescent** devices with cyclic driver voltage)

IT 50851-57-5, **Polystyrene sulfonic acid**
(polymeric **electroluminescent** devices with cyclic driver voltage)

L46 ANSWER 2 OF 8 HCA COPYRIGHT 2003 ACS

130:30999 Patterning organic **light-emitting** devices.
Pichler, Karl; Bright, Christopher (Cambridge Display Technology Ltd., UK). PCT Int. Appl. WO 9853510 A1 **19981126**, 31 pp. DESIGNATED STATES: W: JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1998-GB1265 19980430. PRIORITY: GB 1997-10344 19970521.

AB Methods for patterning org. **light-emitting** devices having an org. **light-emitting** layer underlying an electrode layer entail: a first patterning step, in which the electrode layer is patterned by exposure to a laser beam so as to remove part of the depth of the electrode layer in the areas patterned by the laser beam; and a second patterning step in which the remaining depth of the electrode layer is removed in the areas patterned during the first step, the second patterning step being of a type to which the org. layer is less sensitive than that of the first patterning step. Alternately, the remaining electrode layer may be converted to an insulator in the patterned areas. Application to displays is indicated.

IT **126213-51-2**
(patterning org. **light-emitting** devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

IC ICM H01L051-20
ICS H01L027-15

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76

ST org **light emitting** device patterning

IT Etching
(dry, laser-induced; patterning org. **light-emitting** devices)
IT **Electroluminescent** devices
Semiconductor device fabrication
(patterning org. **light-emitting** devices)
IT Optical imaging devices
(patterning org. **light-emitting** devices for)
IT 96638-49-2, Polyphenylene vinylene **126213-51-2**
(patterning org. **light-emitting** devices)
IT 50851-57-5, **Polystyrene sulfonic acid**
(patterning org. **light-emitting** devices)
IT 114955-91-8
(patterning org. **light-emitting** devices by etching of)

L46 ANSWER 3 OF 8 HCA COPYRIGHT 2003 ACS
128:134182 Electroluminescent devices. Jonas, Friedrich; Elschner, Andreas; Wehrmann, Rolf; Quintens, Dirk (Bayer A.-G., Germany). Ger. Offen. DE 19627071 A1 **19980108**, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1996-19627071 19960705.
AB Electroluminescent devices are described which employ a material(s) selected from polyfurans, polypyrroles, polyanilines, polythiophenes, and polypyridines as a conductor in the hole- and/or electron-injecting layers. The use of the polymers as conductors for this purpose is also described.
IT **126213-51-2P**, Poly(3,4-**ethylenedioxythiophene**)
(electroluminescent devices with hole- and/or electron-injecting layers using polymeric conductors)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

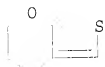
IC ICM H05B033 02
ICS C09K011-06; C08G061-12
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76
ST polymer conductor electroluminescent device injection layer; electron injection layer polymer conductor LED; **hole injection** layer polymer conductor LED

IT 50851-57-5, **Polystyrene sulfonic acid**
(electroluminescent devices with hole- and/or electron-injecting layers using polymeric conductors)
IT **126213-51-2P**, Poly(3,4-**ethylenedioxythiophene**)
163359-60-2P
(electroluminescent devices with hole- and/or electron-injecting layers using polymeric conductors)

L46 ANSWER 4 OF 8 HCA COPYRIGHT 2003 ACS
128:134180 **Electroluminescent** devices using lamellar electrodes. Wehrmann, Rolf; Jonas, Friedrich; Elschner, Andreas; Hueppauff, Martin (Bayer A.-G., Germany; Bosch, Robert, G.m.b.H.). Ger. Offen. DE 19627069 A1 **19980108**, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1996-19627069 19960705.
AB **Electroluminescent** devices comprising a substrate, an anode, an **electroluminescent** structure, and a cathode are described in which .gtoreq.1 of the electrodes is transparent and the anode is formed from .gtoreq.2 layers, the layer adjacent to the substrate is formed from an elec. conductive inorg. material and the layer adjacent to the **electroluminescent** structure comprises a conductive material having a work function of >4.5 eV which can be depositing using a wet chem. deposition method.
IT **126213-51-2**
(org. **electroluminescent** devices using lamellar anodes)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-12
ICS H05B033-28; C09K011-06
ICA G09F009-33
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
ST **electroluminescent** device lamellar anode
IT Anodes
Electric contacts
Electroluminescent devices
(org. **electroluminescent** devices using lamellar anodes)
IT 50926-11-9, Indium tin oxide
(org. **electroluminescent** devices using lamellar anodes)

IT 9080-79-9, **Polystyrene sulfonic acid** sodium salt **126213-51-2**
(org. **electroluminescent** devices using lamellar anodes)

L46 ANSWER 5 OF 8 HCA COPYRIGHT 2003 ACS
127:293889 The electronic structure of poly(3,4-**ethylene-dioxythiophene**): studied by XPS and UPS. Xing, K. Z.; Fahlman, M.; Chen, X. W.; Inganaes, O.; Salaneck, W. R. (Department of Physics (IFM), University of Linkoeping, S-581 83, Linkoping, Swed.). Synthetic Metals, 89(3), 161-165 (English) **1997**. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB The electronic structure of poly(3,4-**ethylene-dioxythiophene**) (**PEDOT**) was investigated by x-ray and UV photoelectron spectroscopies as well as quantum chem. calcns. Significant differences have been obsd. in the photoelectron spectra between as-prepd. chem. neutralized and anion-doped **PEDOT** thin films. The electronic structures of as-prepd. neutral and doped **PEDOT** obtained from the photoelectron spectra are in good agreement with the results of new quantum chem. electronic structure calcns. No significant thermal-induced effects were detected for either as-prepd. neutral or doped **PEDOT** films. The concn. of anions on the polymer surface depends upon the size of the anion, with large anions, like **polystyrene sulfonate** (**PSS**-) base, being much more likely to cover the surface of a **PEDOT** film than small anion, such as tosylate(p-methylbenzenesulfonate). This surface concn. effect probably makes the large-anion-doped polymer a more suitable candidate as an electrode in polymer **light-emitting** diodes (LEDs) than the small-anion-doped polymer.

IT **126213-51-2**
(electronic structure of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns.)

RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73, 76

ST electronic structure **polyethylenedioxythiophene**; doped **polyethylenedioxythiophene** electronic structure; XPS electronic structure **polyethylenedioxythiophene**; UPS

electronic structure **polyethylenedioxythiophene**

IT Binding energy
Conducting polymers
Work function
(electronic structure of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns.)

IT Doping
Valence band
(electronic structure of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns. in relation to)

IT Electronic structure
(of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns.)

IT 104-15-4, p-Toluenesulfonic acid, uses 50851-57-5, **Polystyrenesulfonic acid**
(dopant; electronic structure of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns.)

IT **126213-51-2**
(electronic structure of poly(3,4-**ethylenedioxythiophene**) detn. by XPS, UPS and quantum chem. calcns.)

L46 ANSWER 6 OF 8 HCA COPYRIGHT 2003 ACS
127:114980 Polymer **light-emitting** diodes with **polyethylene dioxythiophene-polystyrene sulfonate** as the transparent anode. Cao, Y.; Yu, G.; Zhang, C.; Menon, R.; Heeger, A. J. (UNIAX Corporation, 6780 Cortona Drive, Santa Barbara, CA, 93117, USA). Synthetic Metals, 87(2), 171-174 (English) **1997**. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB **Polyethylene dioxythiophene-polystyrene sulfonate** (PEDT-**PSS**) thin films spin-cast from aq. dispersion were used as semi-transparent anodes for polymer **light-emitting** diodes (LEDs). An external quantum efficiency of 2.0% was achieved with poly(2-methoxy,5-(2'-Et-hexyloxy)-1,4-phenylene vinylene) (MEH-PPV), as the semiconducting luminescent polymer. LEDs fabricated with the PEDT-**PSS** anode exhibit an enhanced stress life >500 h at 70 mA/cm2 under const.-current conditions (initial brightness 600 cd/m2, reduced to 450 cd/m2 after 500 h).

IT **155090-83-8**
(polymer **light-emitting** diodes with **polyethylene dioxythiophene-polystyrene sulfonate** as transparent anode)

RN 155090-83-8 HCA

CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

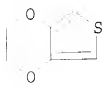
CM 1

CRN 126213-51-2

CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1– CH=CH_2

D1– SO_3H

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST LED polymer **polyethylene dioxythiophene polystyrene sulfonate**, MEH PPV LED polystyrene PEDT **PSS**; anode **polyethylene dioxythiophene polystyrene sulfonate** LED
IT Anodes
Electroluminescent devices
(polymer **light-emitting** diodes with **polyethylene dioxythiophene-polystyrene sulfonate** as transparent anode)

IT 7440-70-2, Calcium, uses 138184-36-8, MEH-PPV **155090-83-8**
(polymer **light-emitting** diodes with **polyethylene dioxythiophene-polystyrene sulfonate** as transparent anode)

L46 ANSWER 7 OF 8 HCA COPYRIGHT 2003 ACS
127:10862 Polymeric anodes for improved polymer light-emitting diode performance. Carter, S. A.; Angelopoulos, M.; Karg, S.; Brock, P. J.; Scott, J. C. (Department of Physics, University of California, Santa Cruz, CA, 95064, USA). Applied Physics Letters, 70(16), 2067-2069 (English) **1997**. CODEN: APPLAB. ISSN: 0003-6951. Publisher: American Institute of Physics.

AB The authors have studied polyaniline and **polyethylenedioxythiophene** transparent electrodes for use as **hole-injecting** anodes in polymer light emitting diodes. The anodes were doped with a variety of polymer and monomer-based acids and cast from either H2O or org. solvents to det. the effect of the dopant and solvent on the **hole-injection** properties. The anodes with polymeric dopants have improved device quantum efficiency and brightness relative to those with small mol. dopants, independent of cond., solvent, or type of conducting polymer. For the most conducting polymer anodes [.sigma.>2(.OMEGA. cm)-1], diodes could be made without an In Sn oxide underlayer. These diodes show substantially slower degrdn.

IT **126213-51-2**
(polymeric anodes for improved polymer light-emitting diode performance)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36, 76

ST LED polymeric anode MEH PPV; electroluminescence device polymeric anode MEH PPV; methoxyethylhexoxy phenylene vinylene polymeric anode LED; **ethylenedioxythiophene** polymeric LED anode MEH PPV; aniline polymeric LED anode MEH PPV; current voltage LED anode polymeric

IT 872-50-4, uses 25233-30-1, Polyaniline **126213-51-2** 138184-36-8

(polymeric anodes for improved polymer light-emitting diode performance)

IT 3144-16-9, Camphor sulfonic acid 50851-57-5, **Polystyrenesulfonic acid** 78166-45-7
(polymeric anodes for improved polymer light-emitting diode performance)

L46 ANSWER 8 OF 8 HCA COPYRIGHT 2003 ACS

126:306235 Polymeric anodes for organic **light-emitting** diodes. Scott, J. C.; Carter, S. A.; Karg, S.; Angelopoulos, M. (IBM Research Division, Almaden Research Center, 650 Harry Road, San Jose, CA, 95120-6099, USA). Synthetic Metals, 85(1-3), 1197-1200 (English) **1997**. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB Polymer **light-emitting** diodes based on PPV, for example MEH-PPV, are known to be susceptible to photo-oxidative degrdn. The formation of the carbonyl species in the polymer results in quenching of the luminescence. In addn. the oxidn. process reduces the conjugation of the polymer, leading to lower charge carrier mobilities and consequently higher operating voltages. Previous in situ FTIR studies revealed that even in a dry inert atm. polymer oxidn. occurs, and that ITO can act as the source of oxygen. In order to explore further the nature of the oxidn. mechanism and to provide guidance for its elimination, we have studied the behavior of MEH-PPV LEDs prepd. with conducting polymer anodes. When a layer of polyaniline is present between the ITO and the MEH-PPV the device characteristics improve dramatically: the injection voltage drops, the luminous efficiency increases and, most significantly, the rate of decay of the luminance decreases by up to two orders of magnitude. These data not only confirm that ITO is a source of oxygen but also imply that the oxidn. mechanism is due to direct interfacial reaction. We compare several different forms of polyaniline, with different dopants, as well as a deriv. of a polythiophene.

IT **126213-51-2**, Poly(3,4-**ethylenedioxythiophene**)
(elec. and optical properties of MEH-PPV-based **LED** prepd. on polyaniline and poly(**ethylenedioxythiophene**) anodes)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73
ST polyphenylenevinylene LED polyaniline
polyethylenedioxythiophene anode
IT Electric current-potential relationship
Electroluminescent devices
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT Poly(arylenealkenylenes)
Polyanilines
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT 25233-30-1, Polyaniline **126213-51-2**, Poly(3,4-
ethylenedioxythiophene) 138184-36-8, MEH-PPV
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT 7429-90-5, Aluminum, uses 7440-57-5, Gold, uses 7440-70-2,
Calcium, uses 50926-11-9, ITO
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes and)
IT 9003-53-6D, **Polystyrene**, **sulfonated** 33028-26-1
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes contg.)

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(FILE 'HCA' ENTERED AT 17:54:02 ON 12 FEB 2003)
SAVE L37 CLE483/A
SAVE L39 CLE483A/A
SAVE L40 CLE483B/A
SAVE L41 CLE483C/A

FILE 'REGISTRY' ENTERED AT 19:08:35 ON 12 FEB 2003

FILE 'HCA' ENTERED AT 19:09:04 ON 12 FEB 2003

FILE 'REGISTRY' ENTERED AT 19:10:37 ON 12 FEB 2003
L47 1 S 9003-53-6

FILE 'HCA' ENTERED AT 19:11:25 ON 12 FEB 2003
L48 2307 S L47(3A)(SULFONAT? OR SULPHONAT? OR POLYSULFONAT? OR POL
L49 11 S L48 AND L13
L50 4 S L49 AND (L8 OR L9)
L51 1 S L50 AND 1907-1998/PY

=> d l51 1 cbib abs hitstr hitind

L51 ANSWER 1 OF 1 HCA COPYRIGHT 2003 ACS
126:306235 Polymeric anodes for organic **light-emitting** diodes. Scott, J. C.; Carter, S. A.; Karg, S.; Angelopoulos, M. (IBM Research Division, Almaden Research Center, 650 Harry Road, San Jose, CA, 95120-6099, USA). Synthetic Metals, 85(1-3), 1197-1200 (English) **1997**. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB Polymer **light-emitting** diodes based on PPV, for example MEH-PPV, are known to be susceptible to photo-oxidative degrdn. The formation of the carbonyl species in the polymer results in quenching of the luminescence. In addn. the oxidn. process reduces the conjugation of the polymer, leading to lower charge carrier mobilities and consequently higher operating voltages. Previous in situ FTIR studies revealed that even in a dry inert atm. polymer oxidn. occurs, and that ITO can act as the source of oxygen. In order to explore further the nature of the oxidn. mechanism and to provide guidance for its elimination, we have studied the behavior of MEH-PPV LEDs prepd. with conducting polymer anodes. When a layer of polyaniline is present between the ITO and the MEH-PPV the device characteristics improve dramatically: the injection voltage drops, the luminous efficiency increases and, most significantly, the rate of decay of the luminance decreases by up to two orders of magnitude. These data not only confirm that ITO is a source of oxygen but also imply that the oxidn. mechanism is due to direct interfacial reaction. We compare several different forms of polyaniline, with different dopants, as well as a deriv. of a polythiophene.

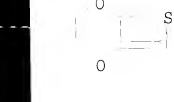
IT **126213-51-2**, Poly(3,4-**ethylenedioxythiophene**) (elec. and optical properties of MEH-PPV-based **LED** prepd. on polyaniline and poly(**ethylenedioxythiophene**) anodes)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IT **9003-53-6D**, Polystyrene, **sulfonated** (elec. and optical properties of MEH-PPV-based **LED** prepd. on polyaniline and poly(**ethylenedioxythiophene**) anodes contg.)

RN 9003-53-6 HCA
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
CMF C8 H8

H_2C═CH─Ph

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73
ST polyphenylenevinylene LED polyaniline
polyethylenedioxythiophene anode
IT Electric current-potential relationship
Electroluminescent devices
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT Poly(arylenealkenylenes)
Polyanilines
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT 25233-30-1, Polyaniline **126213-51-2**, Poly(3,4-
ethylenedioxythiophene) 138184-36-8, MEH-PPV
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes)
IT 7429-90-5, Aluminum, uses 7440-57-5, Gold, uses 7440-70-2,
Calcium, uses 50926-11-9, ITO
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes and)
IT **9003-53-6D**, Polystyrene, **sulfonated** 33028-26-1
(elec. and optical properties of MEH-PPV-based **LED**
prepd. on polyaniline and poly(**ethylenedioxythiophene**)
anodes contg.)

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FILE 'REGISTRY'
L47 1 S 9003-53-6

FILE 'HCA'
L48 2307 S L47(3A)(SULFONAT? OR SULPHONAT? OR POLYSULFONAT? OR POL
L49 11 S L48 AND L13
L50 4 S L49 AND (L8 OR L9)
L51 1 S L50 AND 1907-1998/PY

L52 0 S L51 NOT L46